

SCI-WMS: Application of a Web-Mapping Service for Facilitating Comparison of Models and Observations

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ABSTRACT

The Cyber-Infrastructure (CI) component of the U.S. Integrated Ocean Observing System (IOOS) Coastal and Ocean Modeling Testbed (COMT) aims to provide a unified search, access, analysis and visualization environment that allows scientists to work efficiently with a variety of ocean model results and observational data. The infrastructure is based on community standards, a family of web services and tools that work across a variety of different model types, including structured and unstructured grids. The testbed encourages the modelers to use community standards and conventions, following IOOS DMAC principles, leading to interoperability and software reuse. The fully developed infrastructure enables the creation of customized model/data assessment applications for the research community and the development of complementary applications for decision makers and the public; therefore the entire geosciences community stands to benefit from this foundational development.

SCIWMS, an open-source web service for visualization and analysis of distributed gridded model data hosted on DAP servers, sits at the core of the cyber-infrastructure effort. SCIWMS uses topology caching and other techniques to deliver high-speed visualizations for numerous types of model outputs served by distributed DAP servers. Support for structured and unstructured geo-referenced topologies is provided. The modular cross-platform Python implementation of SCIWMS allows the CI team to leverage associated developments in the geospatial data science community. This presentation outlines the implementation and technology stack used in SCIWMS and describes the deployment of SCIWMS for visualizing model data and simulations within the scope of the IOOS COMT project.